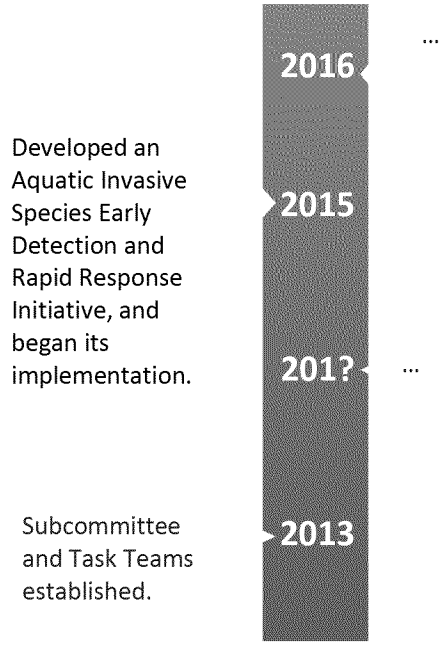
ANNEX 6:
AQUATIC INVASIVE SPECIES
PROGRESS REPORT OF THE PARTIES
2016

OVERVIEW

Aquatic invasive species (AIS) have historically caused significant impacts to the Great Lakes Basin Ecosystem (Ecosystem), and the economies and social constructs that the ecosystem supports. The 2012 Great Lakes Water Quality Agreement (GLWQA) recognizes the need to address AIS issues, and commits Canada and the United States to: preventing the introduction of AIS; controlling or reducing the spread of existing AIS; and eradicating, where feasible, existing AIS with the Ecosystem. Canada and the United States continue to minimize risk of Asian carps and other species invading the Great Lakes by a combination of risk assessment and risk management. Since 2012, no new AIS are known to have become established in the Great Lakes.

PROGRESS TOWARD MEETING GLWQA COMMITMENTS



This annex is being implemented by the Aquatic Invasive Species Subcommittee, co-led by Fisheries and Oceans Canada and the United States Fish and Wildlife Service. Organizations on the subcommittee include: [use logos from Fisheries and Oceans Canada, U.S. Fish and Wildlife Service, 1854 Treaty Authority, Canadian Aquatic Invasive Species Network, Chippewa-Ottawa Resource Authority, First Nation / Metis – Chiefs of Ontario, Great Lakes Indian Fish and Wildlife Commission, Great Lakes Commission, Great Lakes Fishery Commission, Great Lakes St. Lawrence Cities Initiative, Michigan Department of Environmental Quality, Minnesota Department of Natural Resources, New York Department of Environmental Conservation, Ohio Department of Natural Resources, Ontario Federation of Anglers and Hunters, Ontario Ministry of Natural Resources, Ontario

Invasive Species Centre, The Nature Conservancy, U.S. Environmental Protection Agency, and U.S. National Oceanographic and Atmospheric Administration.

BINATIONAL ACTIONS TAKEN FOR KEY COMMITMENTS

By 2015, develop and implement an AIS early detection and rapid response initiative.

- An AIS early detection and rapid response initiative was developed and is being implemented by Canada and the United States as a part of a number of strategies being applied to prevent the introduction and spread of AIS. The initiative includes several components to ensure Canada and the United States have the necessary tools to detect invaders early on, and undertake any rapid response activities to eradicate the population or to reduce further its spread:
    - An "AIS species watch list" of those species of the highest priority of risk of invading the Great Lakes.
    - A list of priority locations to undertake surveillance for the potential introduction of species on the "AIS species watch list";
    - Protocols for monitoring and surveillance methodologies (such as environmental DNA sampling and sampling using gears that collect fishes and bottom-dwelling invertebrates) so that a potential invader is promptly observed and reported;
    - The sharing of relevant information amongst the responsible departments and agencies to ensure prompt detection of invaders and prompt actions to respond to them; and
    - The coordination of plans and preparations for any response actions necessary to prevent the establishment of newly detected AIS.
- A detailed account of the achievements, to date, under the initiative is available at www.binational.net (http://binational.net/2015/02/23/ais-early-detection/).

Conduct risk assessments on AIS species and pathways for their entry into the Great Lakes.

- Efforts have begun to plan more efficient sharing, among Great Lakes jurisdictions and their partners, of species risk assessment results.
- A binational effort, to assess risks relating to Grass Carp establishment and ecological impacts in the Great Lakes, will soon be completed and published. Based on this analysis, the socioeconomic impacts of Grass Carp will be projected and these results published in the near future.
- Following completion of the Grass Carp ecological risk assessment, a binational risk assessment for Black Carp will be developed beginning in early 2016.
- Pathway risk analyses have been conducted, which are supporting management efforts to prevent the introduction and spread of AIS.
    - Historically, an average of one non-native species was found to be established in the Great Lakes about every 8 months. Most of those introductions resulted from ballast water discharge. No ballast-mediated introductions, and no additional introductions from other pathways, have resulted in establishment of a nonnative species since 2006. Thus, the risk of all pathways, including and especially ballast, has been reduced.
- A risk analysis of illegal trade and transport into Great Lakes jurisdictions was completed and a report of these findings was delivered to the Great Lakes Fishery Commission's Law Enforcement Committee. The report recommends risk management efforts to address the unacceptable risks

documented for regulated (state, provincial, and federal) species in the internet, live bait, live food, aquaculture, private pond/lake stocking, water garden, aquarium/pet, and cultural release pathways. The AIS Subcommittee will continue to work with the Law Enforcement Committee to address risk management needs described in the risk analysis report.

- In the United States, pathway risk reduction of AIS transport in recreational boats is being pursued. A partnership with government and industry is working toward objectives of developing new U.S recreational boat design standards for building new "AIS-Safe Boats" and U.S. standards for AIS removal from existing recreational boats.
- In Canada, the National Recreational Boating Risk Assessment is being conducted.

Other outreach and engagement undertaken in support of meeting various annex commitments.

- An inventory, of outreach activities conducted by Great Lakes agencies and their partners was completed, which will help guide future efforts to enhance existing outreach programs and help guide development of additional programs designed to focus on human-mediated pathway risks not effectively addressed by existing outreach programs.
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DOMESTIC ACTIONS TAKEN

Conduct risk assessments on AIS species and pathways for their entry into the Great Lakes.

- Approximately 160 non-native species risk assessments were conducted by the United States, and have been posted on www.fws.gov (http://www.fws.gov/fisheries/ANS/species_erss_reports.html), with additional species risk assessments to be undertaken and posted. Climate matches for these species a show degree of establishment risk in the Great Lakes basin, if those species are introduced in numbers large enough to establish self-sustaining populations.
- The risk of barge shipping-related transport of fishes, within the Chicago Area Waterway System, was evaluated, and the resulting report delivered to the Asian Carp Regional Coordinating Committee.

Conduct research to develop and test AIS detection, containment, and control technologies.

- Work was initiated on the development and testing of a near-real-time environmental DNA (eDNA) surveillance tool in order to support Law Enforcement efforts relating to illegal transport of Asian carp species into Great Lakes jurisdictions.
- The use carbon dioxide as an environmentally sound approach to help contain Asian carps in the Mississippi River system was tested. Results show promise of this containment technology at reducing the risk of Asian carps spread
- Work was initiated on the development and testing of a system to deliver a piscicide (Antymicin), into waters containing Bighead and Silver Carps, so that non-target environmental impacts are not significant. This technology could be used to reduce populations in the Chicago Area Waterway System and Illinois River, to minimize risk of establishment in the Great Lakes.

Assessment of the potential impacts of climate change on AIS.

- A climate change projection tool was developed that can project the AIS climate niche, within the Great Lakes basin, under climate change scenarios published by the Intergovernmental Panel on

Climate Change (http://www.ipcc.ch/) in the years 2050 and 2070.